CLAIMS

What is claimed is:

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2   1.   A method for illuminating surfaces in computer graphics comprising the steps of:

3
4   constructing one or more finite light sources within a computer animated scene, each of the finite light sources having a finite size and a center;

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6   constructing a plurality of surfaces with the scene, each surface consisting of a plurality of points; and

7
8   approximation of the illumination effect of each of the finite light sources by the use of a plurality of point light sources of varying intensity.

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2   2.   The method of claim 1 wherein a portion of each of the light sources illuminates each of the points.

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3   3.   The method of claim 2 comprising the further step of approximately calculating a light intensity and a light vector direction as a function of the portion of each of the light sources which illuminates each of the points.

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2   4. The method of claim 3 comprising the further step of calculating the light intensity as a function of the portion of the light source which illuminates each of the points.

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2   5. The method of claim 4 comprising the further step of approximating the light vector direction as a function of the portion of the light source shines upon the point.

1   6.   The method of claim 1 wherein said finite light source is a sphere.

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7.   A method for illuminating surfaces in computer graphics comprising the steps of:

constructing a hemispherical light source of infinite radius;

constructing a plurality of surfaces with said scene, said surfaces consisting of a plurality of points.

approximation of the illumination effect of each of the hemispherical light source by the use of a plurality of point light sources.

8. The method of claim 7, comprising the further step of calculating a light intensity and a light vector direction as a function of a portion of the light source which illuminates each of the points.

9. The method of claim 8 wherein said light vector direction is a function of the portion of said hemispherical light source which shines upon said point.

10. The method of claim 9 wherein said light intensity is a function of the portion of said hemispherical light source which shines upon said point.